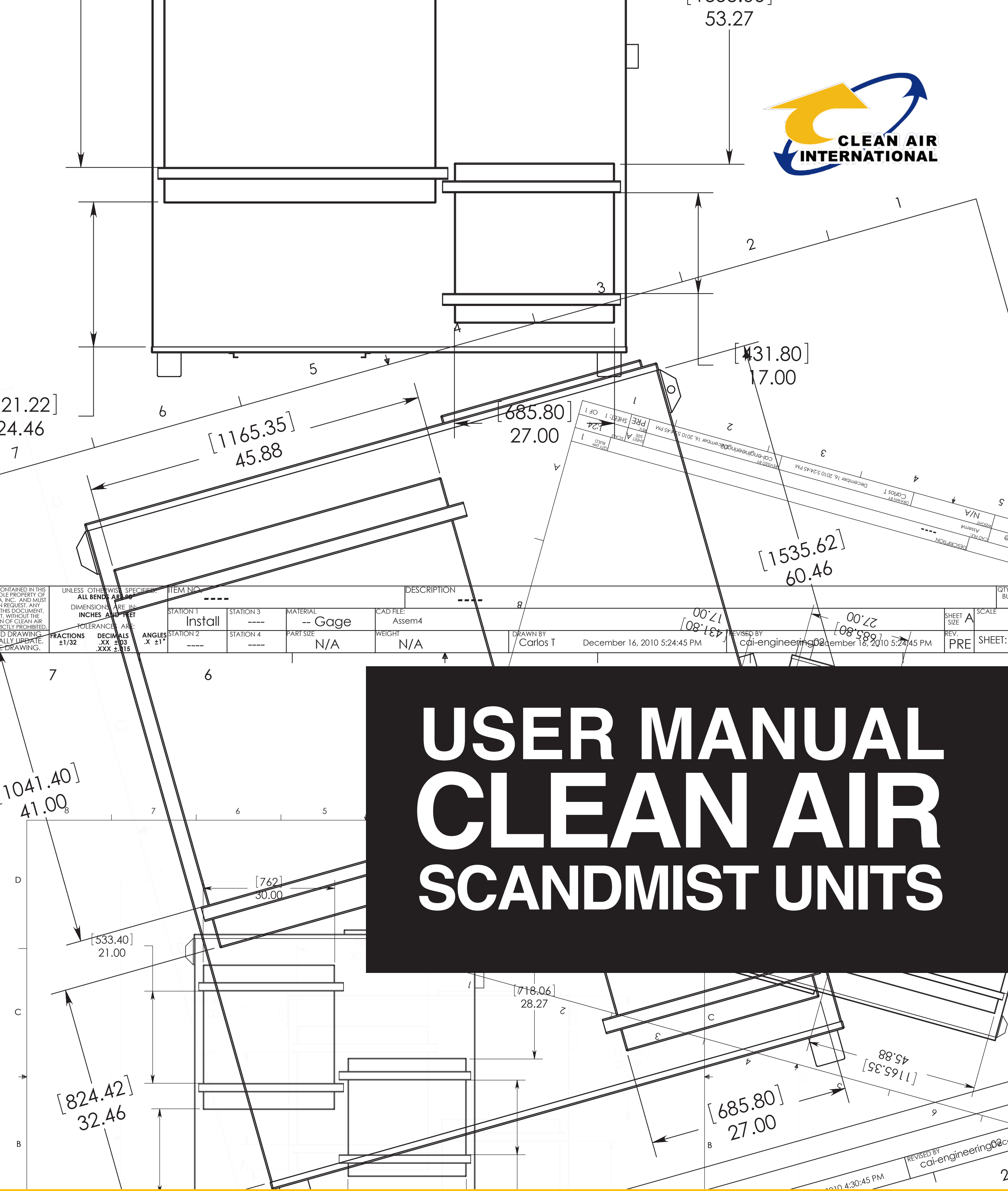
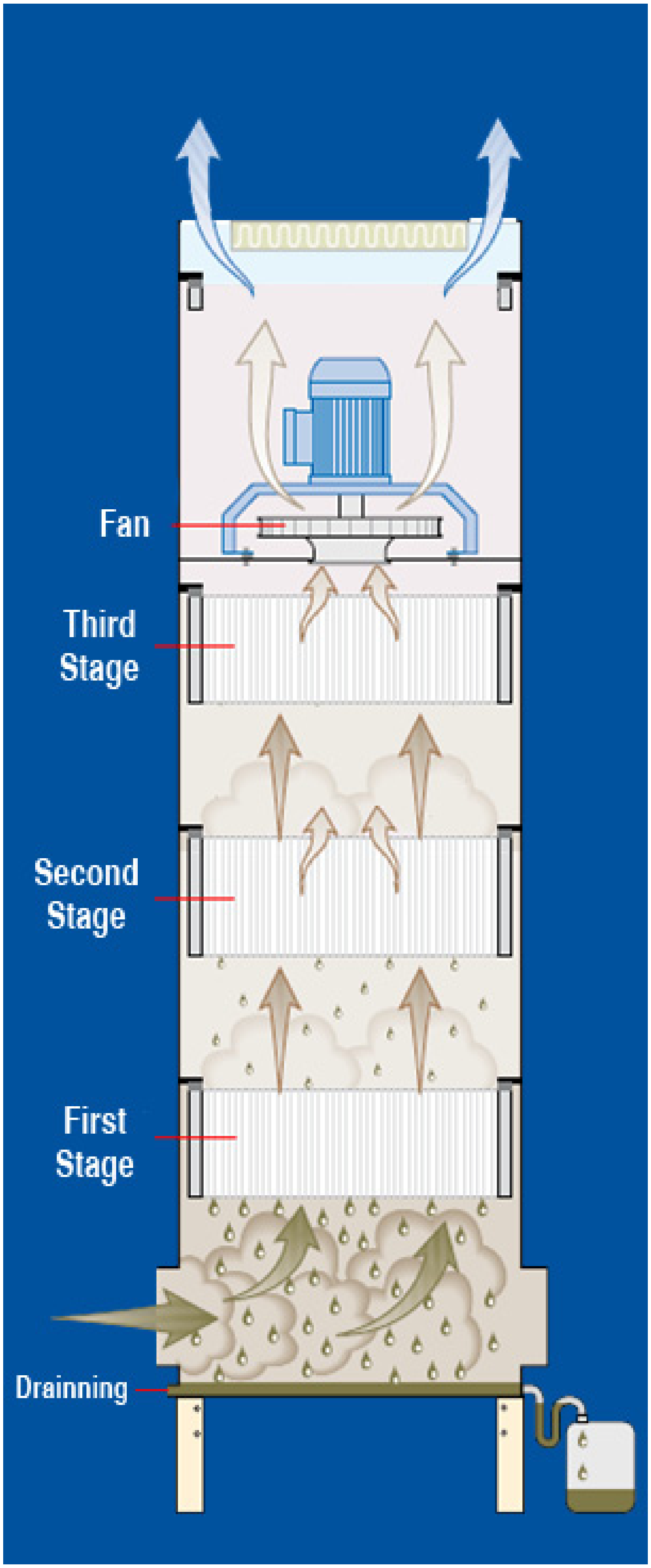
CLEAN AIR INTERNATIONAL



USER MANUAL CLEAN AIR SCANDMIST UNITS

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www.clean-air.com

Table of Contents



1. INTRODUCTION

The ScandMist Units are designed to provide clean air to the workshop environment. The “R” range of the units are used to remove oil smoke particles and the “D” range separates oil mist and water emulsions in a variety of applications, such as drilling, turning, milling and grinding. Both units also eliminate solid particles, such as chips, from the air.

Note: No one is allowed working with or performing service on ScandMist R and D units without first reading and understanding this manual.

1.1. Function and Description

ScandMist R and D are built according to the drawing in the brochure. The different filters separate the polluted air in three stages:

Stage 1

Oil removal filters collect the oil or coolant and allow it to drain to the base of the ScandMist unit. The filters do not “absorb” the oil, but rather coalesce it until it is heavy enough to drain against the airflow to the base of the ScandMist unit, where it can be collected or drained straight back to the machine tool sump.

Stage 2

The “scrubbed” air is then passed through a highly efficient coalescer at stage two. After the second filter, the air is virtually 100% free from oil mist.

Stage 3

The third stage filter is designed to completely clean the remaining air to a standard far higher than the surrounding ambient air. Using a HEPA filter, this final stage ensures that fine, sub-micron particles (trace oil, smoke, bacteria, pollen and spores) are trapped and not allowed to return to the workshop.

The silent, built-in fan returns the cleaned air directly to the room or further on in a ductwork.

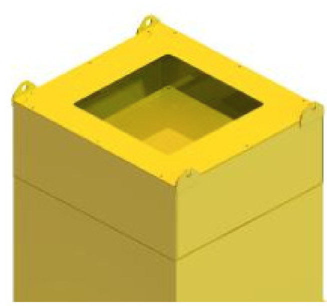


Figure 1. ScandMist Top Module

The fluid, which is separated, drains out through a NPT 1” thread on the bottom of the ScandMist unit for reuse.



Figure 2. 1” NPT Drain

A differential pressure gauge, indicating the pressure drop over the respectively filter stages at-a-glance, is mounted at the factory.

The filters are fastened in parallelograms with the help of the included tools, see figure 3.



Figure 3. Filter Clamps

1.1.2 Receiving and Inspection

Congratulations on buying you new Clean Air ScandMist!
After receiving your new ScandMist, remove the main packing list from the unit and check carefully it matches with the complete shipping. All ScandMist units are land transported, usually in dry van trailer. Units are partially packed on a wooden platform and shipped on its side. Remove the package and take the unit off the platform. Check the unit and any other device sent for damages during transportation. If any damage is found, please call the transportation company and Clan Air immediately. Accessories may be shipped separately according to the order. Depending on the size, some parts can be packed with the ScandMist or in a different package.

The Scandmist unit has four lifting lugs at the top in order to be moved and placed more easily on its final destination.

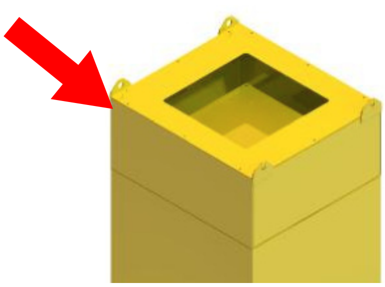


Figure 4. ScandMist Top Module

1.2 Technical Data

	ScandMist 70D	ScandMist 200D	ScandMist 100R	ScandMist 200D	ScandMist 200R	ScandMist 400D	ScandMist 300R	ScandMist 600D
Max. Air flow	700 m^3/h 415 CFM.	1000 m^3/h 600 CFM.	1000 m^3/h 600 CFM.	2000 m^3/h 1200 CFM.	2000 m^3/h 1200 CFM.	4000 m^3/h 2400 CFM.	3000 m^3/h 1800 CFM.	6000 m^3/h 3600 CFM.
Application	Oil Mist	Oil Mist	Oil Smoke	Oil Mist	Oil Smoke	Oil Mist	Oil Smoke	Oil Mist
Motor	1 HP	1.5 HP	1.5 HP	3 HP	3 HP	7.5 HP	5 HP	10 HP
Voltage	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table
Amperage	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table	See Next Table

Scand Mist Motor Amperage							
		Voltages (Amps)					
		3PH			1PH		
UNIT	Motor Size	208 3PH	230 3PH	460 3PH	120 1PH	208 1PH	230 1PH
70D	1HP	4.6	4.2	2.1	16	8.8	8
100D	1.5HP	6.6	6	3	20	13.2	12
100R	1.5HP	6.6	6	3	20	13.2	12
200D	3HP	10.6	9.6	4.8	34	18.7	17
200R	3HP	10.6	9.6	4.8	34	18.7	17
300R	5HP	16.7	15.2	7.6	56	30.8	28
400D	7.5HP	24.2	22	11	80	44	40
600D	10HP	30.8	28	14	100	55	50

2. SAFETY

Note: For function guarantee and safety Clean Air does not allow modifications or changes of the machine. **Warning! Never connect the ScandMist to explosive gases.**

2.1 Safety Equipment

When performing service or cleaning the machine you should use protective respiratory equipment and safety goggles.

2.2 Mounting

The machine must be fastened to the floor with bolts when it is assembled. The machine must be turned off when performing a service.

2.3 Electrical Installation

An authorised electrician must carry out the electrical installation of the ScandMist unit. The machine is provided with a motor switch and a motor protector. Make sure that the fan rotates according to the direction of the arrow.

2.4 Noise

The sound level of the ScandMist unit varies depending on the motor/blower configuration. Please check the appropriate spec sheet for more information.

2.4.1 Blower Rotation

If the blower rotation is not correct, there will be a low performance and an increase of noise in the unit. Make sure the blower rotate correctly. To make sure of this you need to take out the third stage filter and do a visual inspection. There will be an arrow indicating the correct rotation of the blower. Make sure that the blower rotates in the direction of the arrow.

2.5 Drainage of collected fluid
The drained and separated oil from the machine should be collected in a bucket or similar. It is important that leakage to the floor is minimised in order to lower the risk of skidding. Also there's an optional pump return accessory that can be connected to the machining center in order to recycle the collected fluid.

3. INSTALLATION/MOUNTING

3.1 Descriptions

1. Place the ScandMist unit without blocking the inlet or the filter doors.
2. Bolt the ScandMist unit to the floor.
3. The drainage at the bottom should be connected to the pump returning mechanism or to a collecting vessel.
4. To avoid the air returning to the unit through the connection, the drainage tube is equipped with a drain trap. This should have at least a 150 mm high column of oil.
5. Filters should be assembled and disassembled according to figure No. 3 in Section 1.1

3.2 Electrical Installation
An authorised electrician must perform the electrical installation. The ScandMist is equipped with a motor switch and a motor protector. If Delta-connection is required the motor protection must be changed and the connection on the motor changed according to the wiring diagram below. See Chapter 1.3 for motor data.

4. OPERATION AND MAINTENANCE

No one is allowed to work with or perform a service upon a ScandMist R or D without first reading and understanding this manual.

Always contact Clean Air when you are uncertain of something.

4.1 Filter 1 – Pre-filter
The pre-filter is to be cleaned or replaced when reaching a pressure drop of 2.5 in w.c.

4.2 Filter 2 - Fine Filter
The fine-filter is to be replaced when reaching a pressure drop of 2.5 in w.c.

4.3 Micro Filter
The micro-filter, HEPA (H13), is to be replaced when reaching a pressure drop of maximum 3.6 in w.c. Not washable.

4.4 Filter Cleaning (200D, 400D, 600D)
Filter 1 in the 200D, 400D and 600D units can be washed in hot water maximum 60°C. Wash the filter with a gentle mixture of water based detergent solution and rinse it by flushing hot water from the clean side of the filter. Do not use high pressure; the filter can then be damaged. Let the filter get dry before mounting it back into the ScandMist. After a few washes the filter is expired and must be changed to a new one. The filter can also be washed in a chamber washer with water based detergent solution.

Note: The water has to be clean.

5. SPARE PARTS

For guaranteed function of Scandmist units, we only recommend the use of original spare parts. Always contact Clean Air if you have problems with service or repairs, or when replacement parts are required. For spare parts and support on the unit, contact:

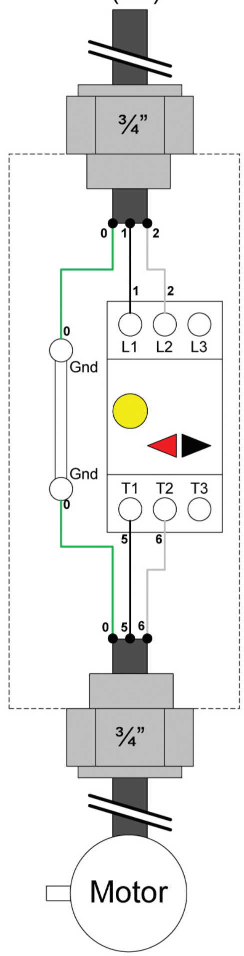
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6. DUCTING

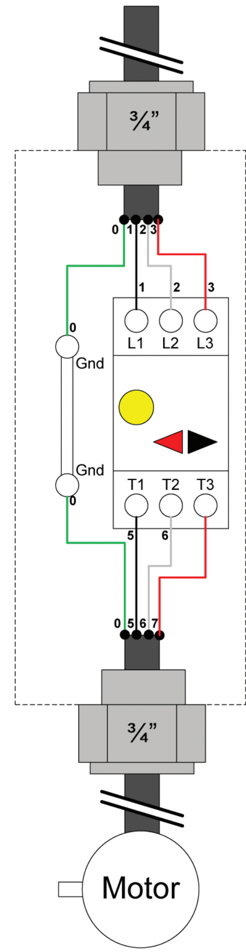
In case that you're responsible for the installation of ducting for the unit, there's a couple of guidelines that you most follow:

- The ducting needs to be rated for at least a pressure of -10 in w.c.
- The ducting most be appropriate for oil mist and liquids.
- All horizontal ducts must have a 2º drop in order to avoid liquid build up inside the ducts.

Single Phase:



Three Phase:



DESCRIPTION:	Down Draft Table, DXF, and Scandmist Basic Wiring Diagram
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